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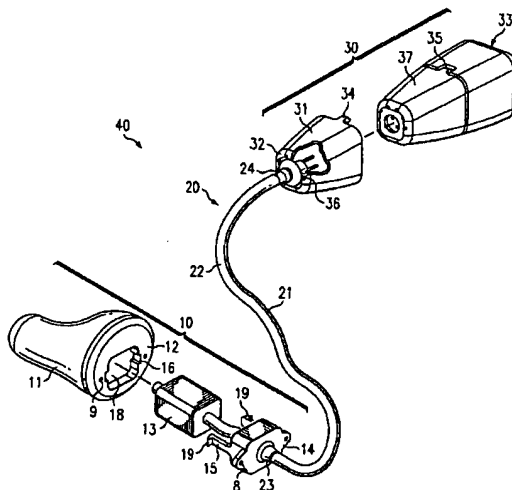
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(54) Title: A BTE/CIC AUDITORY DEVICE AND MODULAR CONNECTOR SYSTEM THEREFOR



(57) Abstract: An earpiece auditory device is provided. The earpiece auditory device includes a behind-the-ear component (30). The behind-the-ear component being shaped to fit behind an ear of a user. The behind-the-ear component includes a module (33) that includes processing circuitry. The earpiece auditory device also includes a completely-in-canal component (10), the completely-in-canal component being shaped to fit into the ear canal of the user in such a manner as to touch the bony portion of the ear canal of the user. The completely-in-canal component includes an ear mold (11). The earpiece auditory device includes a connector (20) physically coupling the behind-the-ear component to the completely-in-canal component. The connector (20) includes at least one end detachably coupled to the behind-the-ear component or the completely-in-canal component.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04R25/00 H04R25/02

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 288 822 A (SIEMENS AG) 2 November 1988 (1988-11-02)	1-6,8,9
Y	the whole document	7
Y	WO 99 07182 A (DECIBEL INSTR INC) 11 February 1999 (1999-02-11) page 7, line 27 -page 9, line 21; figures 3,4A,4B,5,20	1-10
Y	DE 35 02 178 A (PHONAK AG) 29 August 1985 (1985-08-29) abstract page 12, line 9 -page 13, line 33; figures 6-8	1-10
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 701 348 A (SHENNIB ADNAN ET AL) 23 December 1997 (1997-12-23) abstract column 12, line 35 - line 40; figure 30 column 12, line 35 - line 40; figure 30	8,10
Y	US 3 890 474 A (GLICKSBERG RAYMOND C) 17 June 1975 (1975-06-17)	7
A	column 5, line 3 - line 47; figures 1-3,5	1,2,9

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0288822	A	02-11-1988	DE 8706057 U1 EP 0288822 A1	25-08-1988 02-11-1988
WO 9907182	A	11-02-1999	AU 725594 B2 AU 8287998 A CN 1265817 T EP 1000526 A2 JP 2001512943 T WO 9907182 A2	12-10-2000 22-02-1999 06-09-2000 17-05-2000 28-08-2001 11-02-1999
DE 3502178	A	29-08-1985	CH 664057 A5 DE 3502178 A1	29-01-1988 29-08-1985
US 5701348	A	23-12-1997	AU 706468 B2 AU 4611596 A BR 9510413 A CA 2209068 A1 CN 1176731 A EP 0800751 A1 JP 10512116 T PL 321022 A1 RU 2191485 C2 WO 9621334 A1	17-06-1999 24-07-1996 10-11-1998 11-07-1996 18-03-1998 15-10-1997 17-11-1998 24-11-1997 20-10-2002 11-07-1996
US 3890474	A	17-06-1975	NONE	

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